



Management of Petroleum Storage Tank Wastes

Hazardous Waste Program technical bulletin

7/2003

This is a guide for managing wastes removed from the interior of petroleum product storage tanks. Tank wastes may include gasoline, kerosene, diesel, lubricants, fuel oil, water, rinse water, sludge and scale. Users of this guide may be tank owners or operators and anyone providing service to them. Wastes from inside petroleum tanks may be hazardous because of one or more of the following characteristics:

- Ignitability - flashpoint of 140 degrees Fahrenheit or less
- Benzene - 0.5 milligrams per liter or more when tested according to the toxicity characteristic leaching procedure (TCLP)
- Lead - 5 milligrams per liter or more as shown by a TCLP

In general, hazardous wastes must be managed according to the Missouri Hazardous Waste Management Law and Regulations. The regulations state how the materials must be packaged, marked and labeled, how long they may be stored on site, and how they must be transported and disposed. Please see "Hazardous Waste Information Sources" at the end of this guide. Once a tank is no longer being used, the material in the tank is considered solid waste. Within 90 days, the waste in the tank must be removed and characterized for use or disposal. If this is not done and the material in the tank is hazardous, you will be in violation of hazardous waste regulations. However, for wastes from inside petroleum storage tanks, some management options and alternatives to disposal exist. These are noted in the flowchart on page 6 and are explained below:

1. Use or Recycle

Raw Product

If raw product is used for its intended purpose without interim processing, it is not a waste.

Some processing of the waste may be necessary to recover product for use. A hazardous waste permit is required to treat hazardous waste. However, if option a, b, or c below is done at the generator's location, no hazardous waste permit is needed:

- a. Gravity separation.
- b. Simple filtration to remove particulates (Note: The filter media may become hazardous waste).
- c. Use of an oil/water separator (Note: The water may be hazardous waste).



After any of the activities described above, the recovered product may be resold if it meets Missouri Department of Agriculture fuel specifications; may be used in your own vehicles if you choose to do so; or it may be sent to a petroleum refinery or terminal if the refinery/terminal accepts it for use in the petroleum refining process. In addition, recovered product may be sent to a fuel blender provided that no further reclamation or separation is necessary by the blender. If it is necessary to store the water phase generated from the activities described above, the water should be stored in closed containers in good condition and be clearly marked "Petroleum Contaminated Water" until a hazardous waste determination can be made. If the wastewater is determined to be hazardous, it must be stored in accordance with all applicable hazardous waste rules and regulations until appropriately disposed or discharged. For information about managing the water phase, see management option numbers 2, 3, 4 or 6.

The Tank

All hazardous waste must be removed from the tank before moving the tank off site. Because most storage tanks do not meet U.S. Department of Transportation (DOT) container specifications, they are prohibited from being transported while containing hazardous materials. The tank is "empty" if it no longer has contents and has been purged and made inert according to industry practices such as those in the American Petroleum Institute's publication 1604, titled "Closure of Underground Petroleum Storage Tanks." Cleaned and inert tanks may then be recycled or disposed as a solid waste.

2. Petroleum Refinery/Terminal

Tank Interior Wastes

If each of the following conditions are met, tank interior wastes are exempt from solid and hazardous waste regulations:

- The petroleum refinery or terminal accepts the waste for reuse or recycling;
- The transporter takes it from the generator's location directly to the refinery or terminal (no interim storage or treatment facilities used except for transfer facilities meeting hazardous waste regulations); and
- The material is reused in the petroleum refining process.

The generator must follow DOT regulations when shipping the material to the refinery/terminal. To properly claim this exemption, the tank or property owner must keep documents showing his or her agreement with the refinery with records showing when the waste was generated and taken to the refinery or terminal.

3. Domestic Sewage Exemption

Tank Water and Rinsate

If the generator has connections to a sanitary sewer on site and has written permission from the Publicly Owned Treatment Works (POTW) operator to place the waste into the sewer, the waste is exempt from solid and hazardous waste regulation once it is discharged. Hazardous wastewater must be managed in accordance with all applicable hazardous waste rules and regulations until it is discharged. If the material cannot be discharged as is, the treatment plant operator may agree to accept it after it has first been gravity separated, filtered, or run through an oil/water separator. The recovered product may then be used if it meets fuel specifications or may be sent to a refinery or terminal. (Note: The filter media may be hazardous waste.) You should also take care to avoid spills and releases which would have to be cleaned up. Any material contaminated by a spill would have to be tested prior to disposal and appropriately disposed.

Contact the department's Water Pollution Control Program to ask if the process you intend to use requires a permit.

Installing and operating systems to treat hazardous wastewater or contaminated groundwater requires a permit from the Water Pollution Control Program. A general permit for treatment and discharge of "Fuel Spill Cleanup" wastewaters is available for many such projects. Site specific permits may also be required if necessary to protect waters of the state which includes groundwater. Contact the Water Pollution Control Program to ask if the process you intend to use requires a permit.

4. Permit by Rule POTW

Tank Water and Rinsate

The wastewater may be transported to a Publicly Owned Treatment Works (POTW) using a licensed hazardous waste transporter and manifests. The POTW must be in compliance with all terms of the Permit by Rule found in 40 CFR 270.60(c). At the time this document was printed, there were no POTWs in Missouri that met the Permit by Rule standards. There are POTWs in other states that meet the Permit by Rule standards.

5. Sanitary Landfill

Non-hazardous Interior Tank Waste

If waste inside the tank is tested and found to be nonhazardous, it may be disposed in a permitted sanitary landfill subject to special waste disposal requirements. (Note: Landfills cannot accept waste with free liquid. The generator may add nonhazardous absorbents.) The generator may contact the Solid Waste Management Program's Permits Section for guidance concerning disposal of nonhazardous materials.

6. Treatment, Storage or Disposal Facility

Hazardous Interior Tank Wastes

If the waste is hazardous and none of the above mentioned management options are available or possible, the waste must be sent to a Missouri certified resource recovery facility or to a Treatment, Storage or Disposal facility permitted to accept the hazardous waste. Cement kilns or fuel blenders that are permitted to accept hazardous waste may be used. The waste must be managed in accordance with all applicable hazardous waste rules and regulations. A list of commercial Hazardous Waste Treatment, Storage and Disposal facilities in Missouri is available from the Department's Environmental Assistance Office.

Do's:

- Use petroleum products for their originally intended use if possible.
- Recycle reclaimable petroleum by returning it to a petroleum refinery or terminal if possible.
- Avoid spills and releases.
- Clean up any spills and releases immediately. Dispose of product-contaminated soil and debris at a sanitary landfill as soon as possible. Obtain the landfill operator's approval before taking the material off site. Soil may also be landfarmed after obtaining a permit from the Water Pollution Control Program. Under certain conditions soil may be thermally treated with prior approval of the department's Air Pollution Control Program and Hazardous Waste Program.
- Contact the department's Environmental Services Program at (573) 634-2436 if you have a petroleum product release to soil of more than 25 gallons from an underground tank (50 gallons or more from an above ground tank) and/or a release of any quantity of petroleum into

waters of the state.

- Keep copies of shipping papers and agreements with POTWs, petroleum refineries or treatment storage and disposal facilities that document your management of the waste.
- Inert the tank using accepted industry practices. (See “The Tank” section in this bulletin.)
- Follow the department's *Underground Storage Tank Closure Guidance* Document if you are closing a tank.

Don'ts:

- Don't consider waste gasoline, kerosene, diesel, lubricants, water, sludge, and scale to be “used oil”. It does not meet the regulatory definition of “used oil.” You may contact the Technical Assistance Program for bulletins on the management of used oil.
- Don't assume wastes from the tank are nonhazardous. In most cases laboratory analysis will be required to prove the wastes are nonhazardous unless the wastes are exempt from hazardous waste regulation by proper management under options 1, 2 or 3 in this bulletin.
- Don't dispose of petroleum contaminated materials in storm sewers or septic tanks.
- Don't dispose on soil or in surface water.
- Don't use for vegetation control.
- Don't use to start brush pile fires, or tire fires.
- Don't treat by air sparging, bubbling, agitation or otherwise driving air through the waste to lower the benzene concentration (i.e., illegal without a hazardous waste treatment permit).
- Don't deliberately dilute the waste or add material to it for the purpose of making it nonhazardous.
- Don't take the waste to another site for storage or treatment before sending it to the refinery/terminal.
- Don't remove a tank that has not been properly cleaned, purged and made inert from the site.
- Don't use engine exhaust to inert tank. This is not effective and can be dangerous.
- Don't store hazardous waste greater than 90 days (180 days if small quantity generator).

Test Methods:

Flashpoint - Pensky-Martens Closed Cup Tester, Method in ASTM

Standard D-93-79 or D-93-80, or as determined by an equivalent test method approved by the Administrator under procedures set forth in 40 CFR 260.20 and 260.21.

Test for Free Liquids - Paint Filter Liquids Test - Method 9005 -

Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, Publication SW-846 of the U.S. Environmental Protection Agency.

Toxicity Characteristic Leaching Procedure (TCLP) - U.S. Environmental Protection Agency Method 1311. Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, Publication SW-846 of the U.S. Environmental Protection Agency. Wastes from the tank pit (outside the tank) such as soil, groundwater, floating plume, surface water, rock, grass and stumps, empty tanks and piping do not need to be tested for benzene. Lead and flashpoint must still be done when applicable to determine how to manage the wastes. **Wastes from inside the tank are not exempt from benzene testing.**

For More Information

Call or write

Missouri Department of Natural Resources

Hazardous Waste Program

P.O. Box 176

Jefferson City, MO 65102-0176
1-800-361-4827 or (573) 751-3176 office
(573) 751-7869 fax
www.dnr.mo.gov/alpd/hwp

Environmental Assistance Office - 1-800-361-4827
www.dnr.mo.gov/oac/env_assistance.htm

Hazardous Waste Program, Tanks Section - (573) 751-6822
www.dnr.mo.gov/alpd/hwp

Air Pollution Control Program - (573) 751-4817
www.dnr.mo.gov/alpd/apcp

Solid Waste Management Program - (573) 751-5401
www.dnr.mo.gov/alpd/swmp

Water Pollution Control Program - (573) 751-1300
www.dnr.mo.gov/wpscd/wpcp

Above Ground Storage Tank Questions - Department of Agriculture - Petroleum Inspection Program – (573) 751-4278.

DOT Transport Questions - Missouri Department of Economic Development - Division of Motor Carrier and Railroad Safety - (573) 751-7117

To report a spill: Environmental Services Program - (573) 526-3315 or 24-Hour Environmental Emergency (Spill Line) - (573) 634-2436

Hazardous Waste Information Sources

The Missouri Hazardous Waste Management Law and Regulations are available from the Missouri Secretary of State's Office - (573) 751-4015.

- Fact Sheet - Hazardous Waste in Missouri
- Fact Sheet - Does Your Business Generate Hazardous Waste?
- Fact Sheet - Management of Conditionally Exempt Quantities of Hazardous Waste
- Tank Publications may be accessed on the Internet at www.dnr.mo.gov/oac/pubs.htm

This guidance supplements the Underground Storage Tank Closure Guidance Document available from the department's Environmental Assistance office.

This bulletin is meant only to provide general guidance on the proper management of wastes removed from the inside of petroleum storage tanks. If you have questions about this bulletin you may call the department's Environmental Assistance office at 1-800-361-4827 for additional help.

This bulletin is intended for use by generators of petroleum storage tank wastes and not for interim status or permitted hazardous waste treatment, storage or disposal facilities that must operate according to the terms of their interim status or permit.

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